

The Four Thresholds

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Master of Architecture in Architecture

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ABSTRACT

This thesis investigates the architecture of thresholds as a poetic medium for shaping the transitional experience within the built environment. Through the careful orchestration of light, materiality, and spatial progression, the project seeks to cultivate a deliberate slowing of movement, inviting users to engage more deeply with each moment of passage. Drawing inspiration from the contemplative rhythms of Japanese living, where the act of transition is as meaningful as the destination itself, and contrasting them with the often hurried patterns of American habitation and relaxation, this study proposes a bath house nestled into the terraced landscape of Great Falls, Virginia.

The architecture unfolds alongside the descending waterfront hillside, where spaces are carved, layered, and revealed gradually, blurring the boundaries between interior and exterior. Here, the architecture acts not merely as a vessel for activity but as an active participant in a ritual of slowing down, reconnecting body, mind, and environment through the measured unfolding of space.

GENERAL AUDIENCE ABSTRACT

This thesis explores how architecture can create meaningful moments during everyday transitions, like walking through a hallway, entering a room, or stepping outside. Rather than rushing from one place to the next, this project encourages people to slow down and fully experience the spaces they move through, much like savoring each step of a tea ceremony rather than just drinking the tea.

Inspired by traditional Japanese homes, where transitions between spaces are calm and intentional, this study contrasts that rhythm with the faster paced lifestyle often found in American homes. To explore this idea, the project designs a bath house tucked into the hillside landscape of Great Falls, Virginia.

The building follows the natural slope of the land, revealing each space gradually, like turning the pages of a quiet unfolding story. The architecture blends inside and outside spaces using light, natural materials, and thoughtful pacing. Rather than just being a building people use, it becomes part of a calming ritual, helping users reconnect with their surroundings and themselves.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to the faculty and classmates who made my time at Virginia Tech an invaluable and transformative experience. A special thank you to Professor Joe Wheeler, whose mentorship during the latter half of my master's program was instrumental in shaping my understanding of real world architecture. His dedication to exposing students to hands on construction and professional practice profoundly influenced my growth as a designer, and he even taught me how to confidently use a table saw without losing any fingers, which I count as a major success.

I am also deeply grateful to Professor Jim Jones, who taught me to see architecture through a poetic and philosophical lens, allowing me to find depth and meaning in my work. I could not have reached this point without their support and the guidance of many other faculty members who helped me throughout this journey. Finally, thank you to my classmates, whose creativity, drive, and constant pursuit of excellence pushed boundaries and inspired me daily. We grew together, and I am excited for what the future holds for all of us and for architecture.

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THE QUESTION: WHAT IS A THRESHOLD?

A threshold is a spatial moment where transition is heightened through light, material, and movement, obscuring or revealing environmental qualities while shaping the pace of passage and deepening the user's awareness of space and self.

THE ANSWER: THE FOUR ARCHITECTS

In traditional Japanese architecture, daily life is shaped by a deliberate choreography of space, where movement unfolds slowly and intentionally. Architects like Tadao Ando emphasize simplicity, material honesty, and the interplay of light and shadow, creating spaces that encourage a reflective, meditative pace. Toyo Ito, with his exploration of the fluid boundaries between interior and exterior, crafts environments that dissolve into nature, inviting a slow, organic flow through the built space. Frank Lloyd Wright, through his organic architecture, sought harmony between human habitation and the natural world, designing spaces that feel integral to their surroundings and promote a more thoughtful movement through them.

Peter Zumthor's Therme Vals furthers this philosophy by using changes in plane and elevation to transform the journey through a space. As visitors descend into the baths, the shifting planes and materiality create a tactile and sensory experience, a physical embodiment of the passage of time and space. This concept of movement through space, where the experience unfolds gradually and intentionally, directly informs my project. By introducing terraced spaces that descend and ascend along the hillside in Great Falls, Virginia, this design challenges the typical American pace of life, inviting users to slow down and engage with each transition, fostering a deeper connection to the space and environment around them.

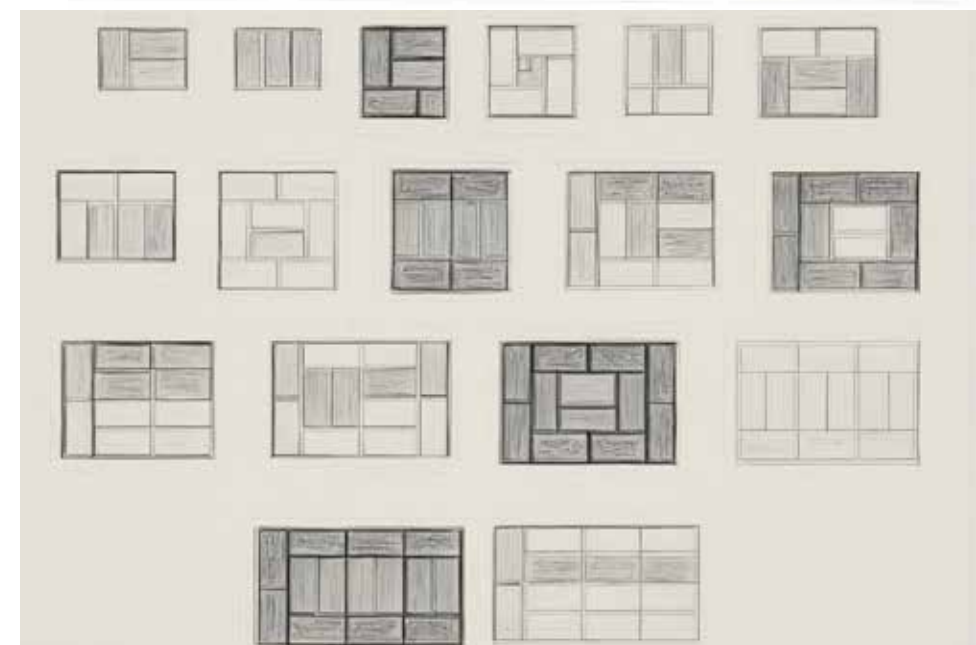
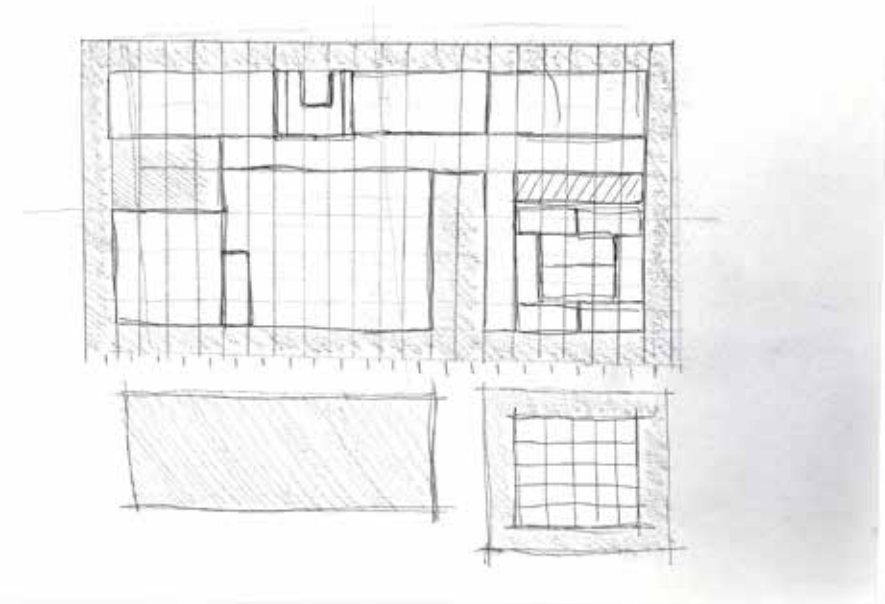
FRAMING THE BODY TO THE BUILDING: TATAMI GRID

Tatami Ratio

The ratio was developed to comfortably accommodate the size of an adult, roughly 6 feet by 3 feet. Tatami mats originally began as sleeping mats, with the 6 foot length reflecting an average adult height, and the 3 foot width derived from the length of a strong root end used when harvesting the tree for its material. These mats were also portable and eventually became common household features, originating from high ranking residences and Buddhist temples.

Early portable tatami mats weighed around 80 pounds, but modern versions are significantly lighter. Japan's early and continued use of tatami mats has made it one of the few major civilizations to develop without significant reliance on furniture. This is largely due to the versatility of tatami, which can function as a sleeping mat, table surface, and more. The essence of the tatami mat also reflects the philosophy of Ma, which captures the concept of spatial awareness and the "in betweenness" of a room without obstructing it physically or dimensionally.

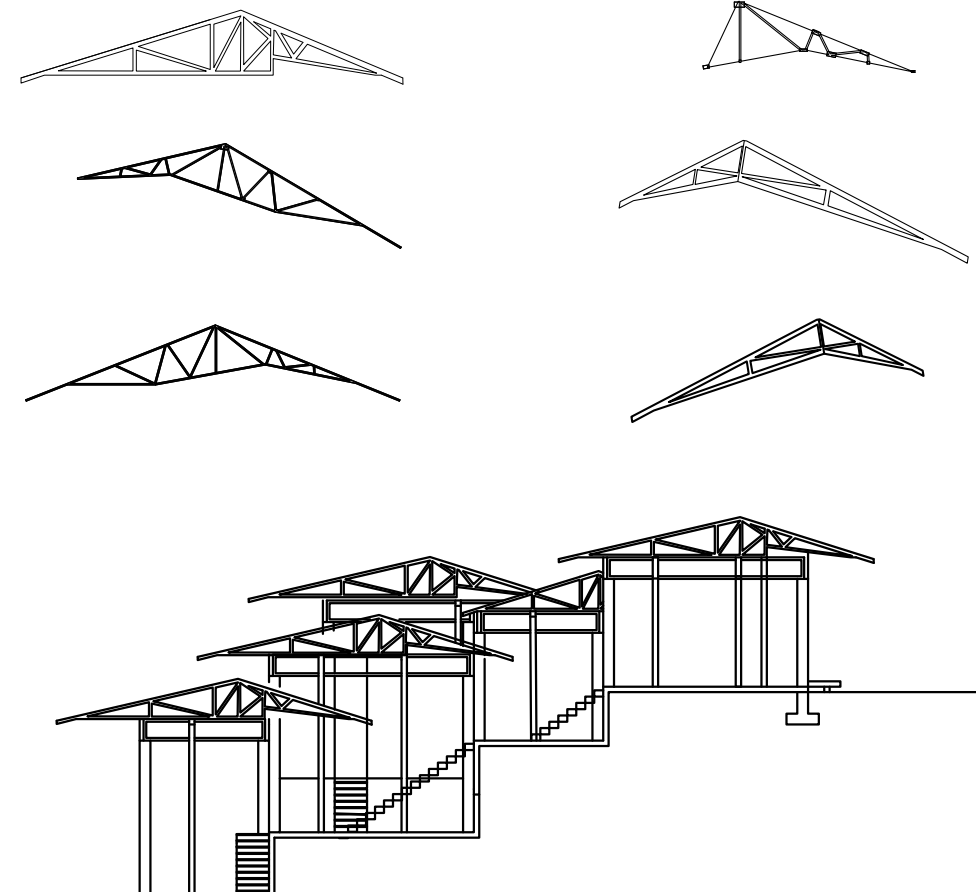
In my thesis, I've applied the proportions of the tatami mat as a guiding module and grid system for the structural layout of the house. The 6 foot length is aligned with the direction of movement and framed views between different programs within the space.



ROOF TRUSS DESIGN

In my design, I sought to emulate the elegance of traditional Japanese roofing structures while incorporating American materials, specifically mass timber CLT (cross-laminated timber), to achieve a modern Japanese aesthetic within the context of American construction. Japanese roofs, with their deep eaves and expressive structural elements, provide a sense of shelter and connection to nature. To translate this into a contemporary American setting, I employed a repeated truss system in the roof, which not only evokes traditional craftsmanship but also directs the movement of the space.

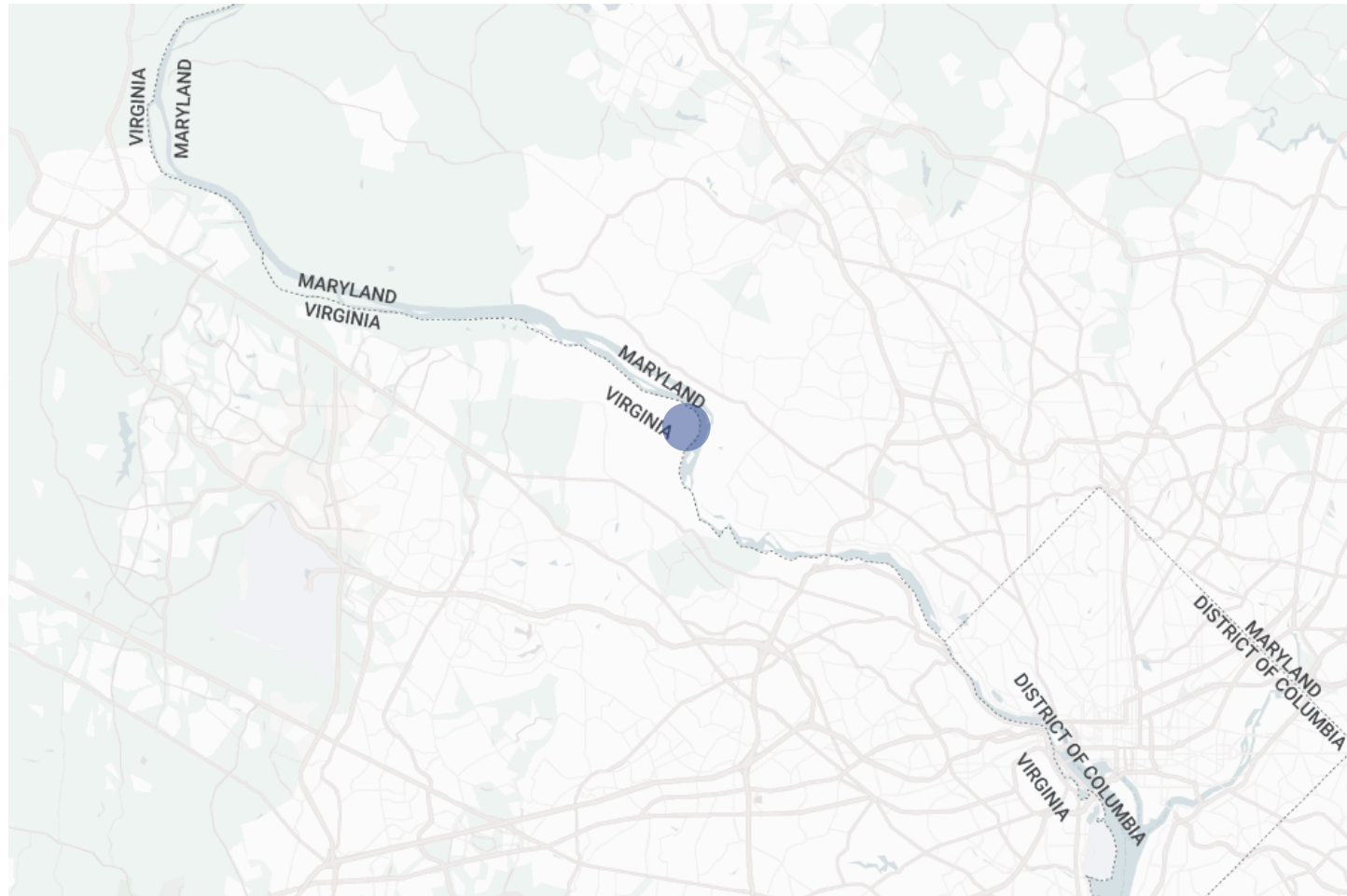
The alignment of the trusses mirrors the downward flow of the building as it descends into the hillside, guiding the user through the architecture and framing the expansive views of the Great Falls river. This truss system informed the structural placement of walls and columns throughout the building, creating a pattern that dictates the spatial movement and program. The arrangement of these elements enhances the user experience, as the flow of the spaces—carefully articulated by the placement of walls and columns—facilitates a journey through the house that is both intentional and reflective. The mass timber, with its warm, natural quality, complements the Japanese principles of simplicity and harmony with nature, while reinforcing the overall sense of transition and movement in the design.



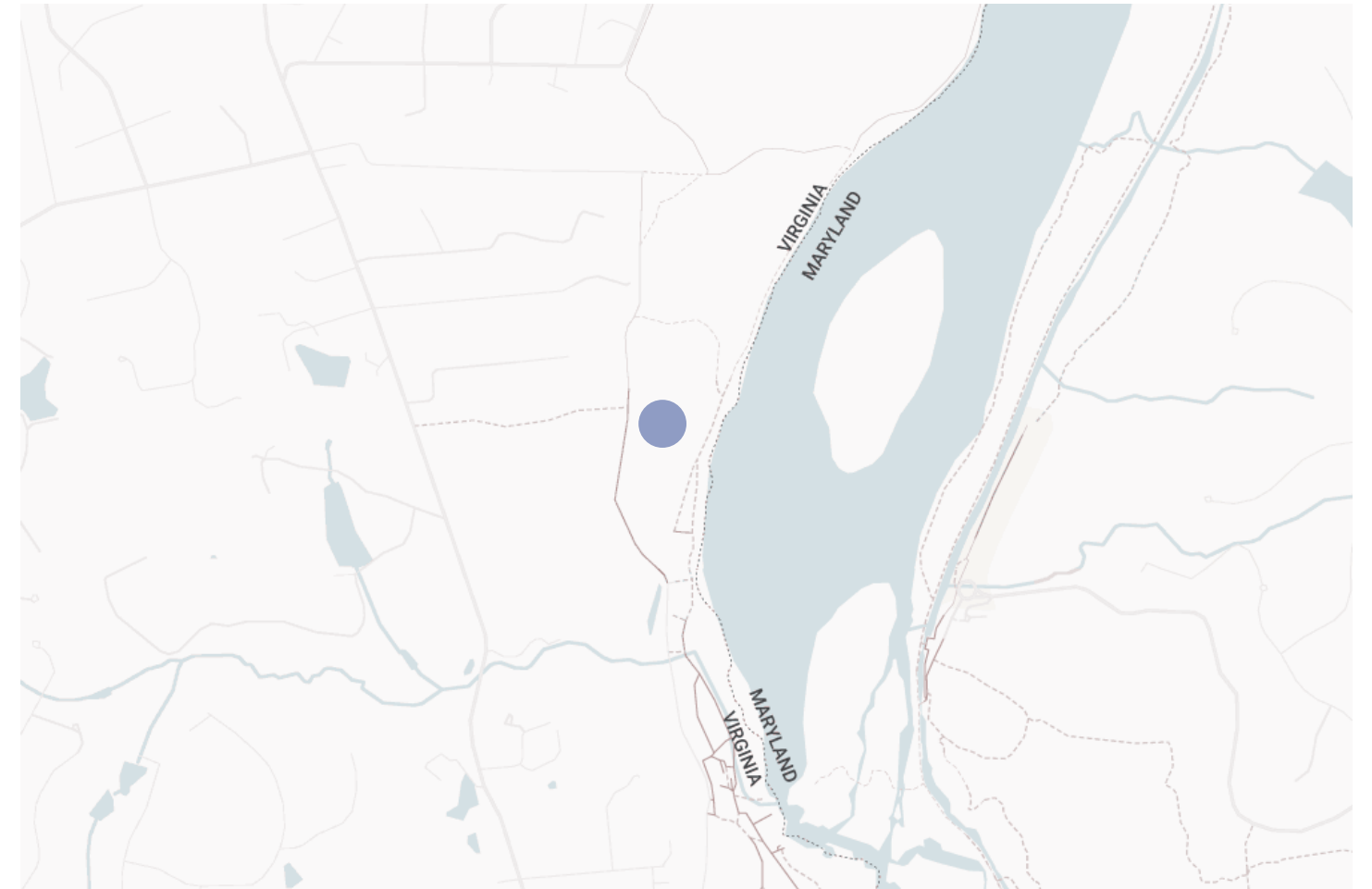
SITE



VIRGINIA | MARYLAND



GREAT FALLS, VA



SITE ANALYSIS: NEIGHBORHOOD + VIEW



SITE ANALYSIS: SUN PATH + WIND PATH



SITE ANALYSIS: PATH FROM ROAD + TREE SCAPE



1. THE OBSCURE THRESHOLD

The obscure threshold is defined by a light originating from an unknown source, which passes through various materials or is redirected into a space to illuminate it or highlight objects. This light may be filtered through a translucent or sheer screen, door, or architectural surface, resulting in a diffused and softened effect. The indirect arrival of light becomes a spatial event, subtly marking transitions and evoking an awareness of movement or change without revealing its origin.

" I don't believe architecture has to speak too much. It should remain silent and let nature in the guise of sunlight and wind"

Tadao Ando

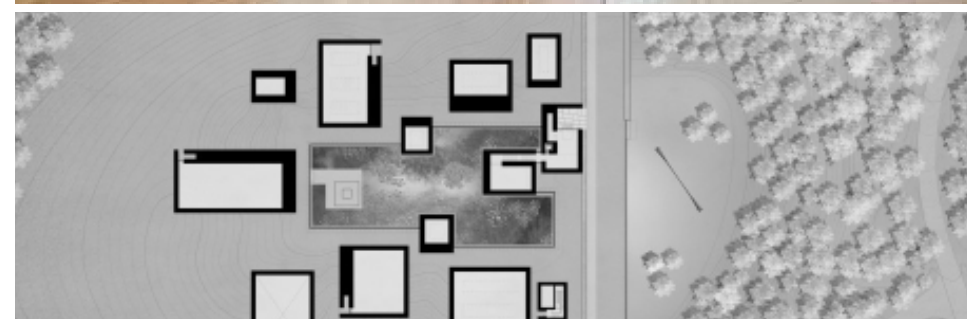
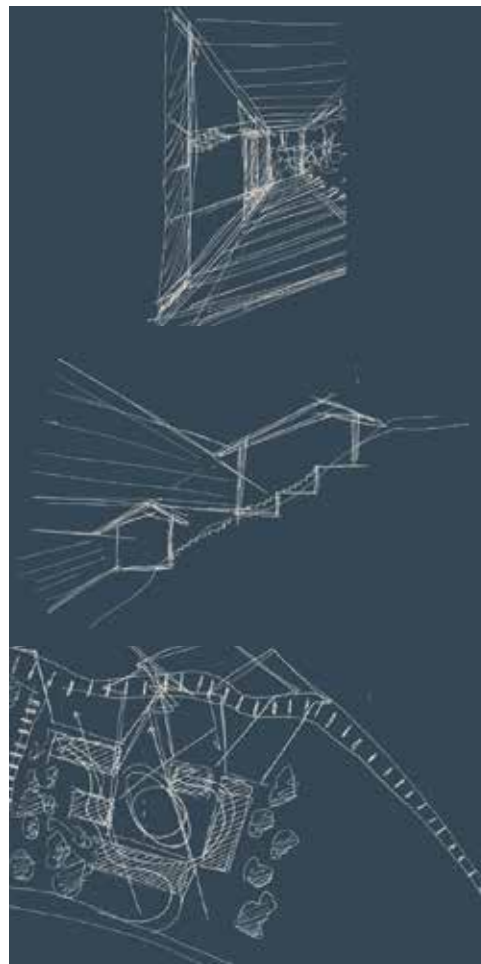


FIGURE 1-1
FIGURE 1-2
FIGURE 1-3
FIGURE 1-4

THRESHOLD EXPLORATION



EARLY DESIGNS



THRESHOLD: OBSCURE











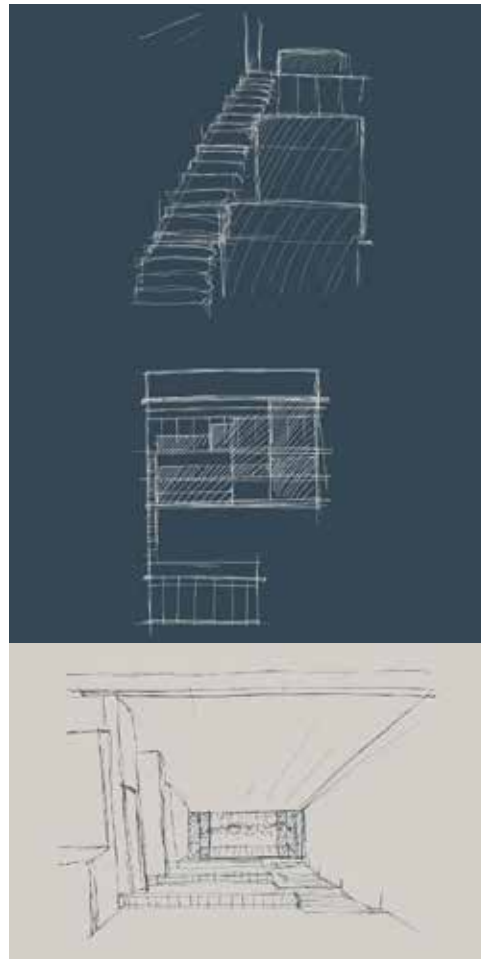
CHAPTER 2: THE PHYSICAL THRESHOLD

The physical threshold is defined through material shifts that can be perceived through touch and bodily interaction. A change in texture, temperature, or material density signals a movement from one space to another. It relies on tactile engagement, making the user physically aware of a spatial boundary or transition without necessarily requiring visual confirmation.

Physical Thresholds and Ma

The Japanese concept of Ma, understood as the meaningful pause or interval between structural elements, informed the way I conceived physical thresholds in my project. Rather than relying on overt partitions or visual noise, I used material transitions—such as shifts in texture, density, or temperature—to subtly mark the passage from one space to another. These changes are quiet but intentional, creating a tactile awareness of movement through space without disrupting its flow. The restraint in detailing draws directly from the ideology of Ma, which sees the space between as just as significant as the structure itself. Like the empty space between posts in traditional Japanese interiors, these thresholds are defined not by what is added, but by what is left open—offering the user a heightened sensitivity to the experience of crossing from one atmosphere to the next.

THRESHOLD EXPLORATION



EARLY DESIGNS



THRESHOLD: PHYSICAL









CHAPTER 3: THE PHENOMENAL THRESHOLD

The phenomenal threshold emerges through the presence of light or environmental effects without a visible source. Light may enter directly through a clear opening—such as a glass window or door—but the source itself remains hidden from view. The result is a mysterious illumination that casts directional light into a space, enhancing its sensory atmosphere while preserving an element of the unknown.

"There is no separation between architecture and nature: there is a connection."

Toyo Ito

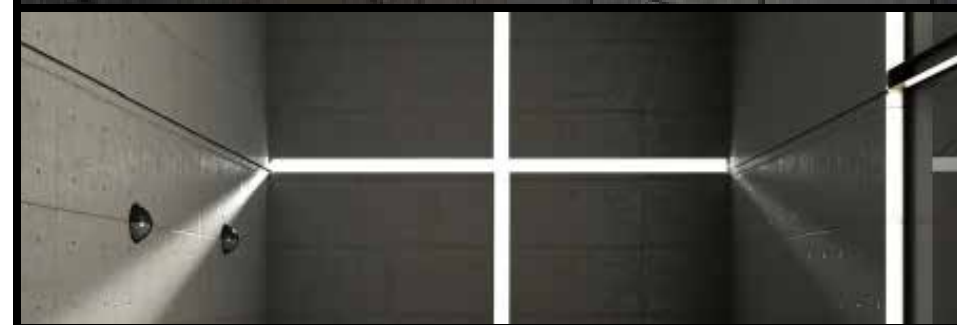
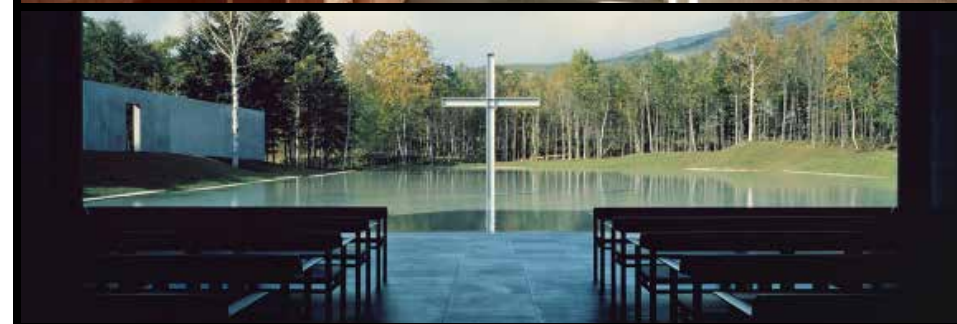
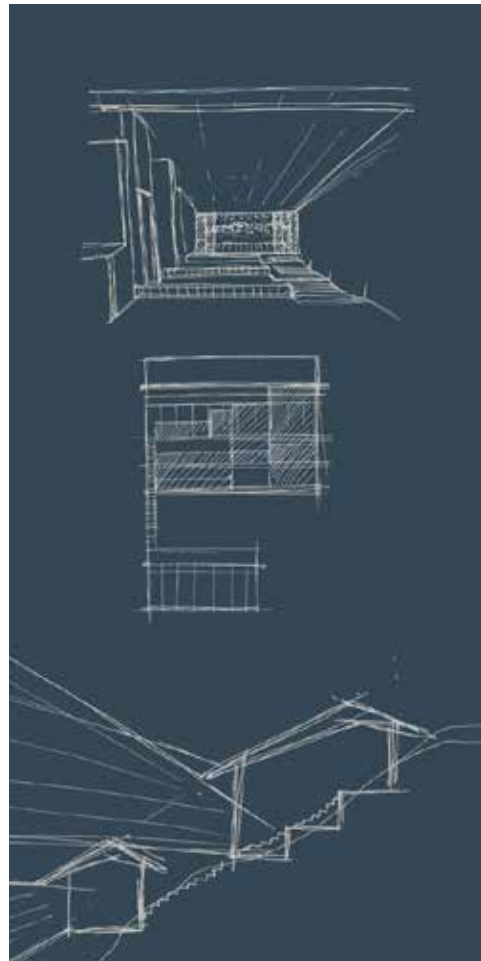


FIGURE 3-1
FIGURE 3-2
FIGURE 3-3
FIGURE 3-4

THRESHOLD EXPLORATION



EARLY DESIGNS



THRESHOLD: PHENOMENAL









CHAPTER 4: THE HABITABLE AND INHABITABLE THRESHOLD

This threshold explores the difference between thresholds that invite lingering and thresholds that encourage movement. Habitable thresholds promote slowness, reflection, and immersion, often found in gardens or open spaces where the materiality—such as the crunch of pea gravel underfoot—activates sensory awareness and deepens presence. Inhabitable thresholds, by contrast, facilitate swift energy and constant flow, like narrow corridors or passageways where movement is prioritized over stillness. The acoustic, tactile, and atmospheric qualities of each material contribute to shaping the user's pace and depth of engagement with the space.

Habitable and Inhabitable Thresholds and Ma

Ma also plays a crucial role in how I designed habitable versus inhabitable thresholds. These are not simply zones of transition, but moments of spatial rhythm where time and movement are altered. Terraced landings and garden spaces act as intentional pauses—zones where the user is invited to slow down, notice their surroundings, and become attuned to natural cues like light, wind, and sound. These inhabitable moments reflect Ma in the way they create emptiness not as absence, but as potential: space filled with the energy of what might occur. Echoing the essence of traditional tea houses, where the bare interior enhances the value of presence and gathering, these zones emphasize the life and stillness that can inhabit simplicity. They resist the urgency of modern lifestyles, instead offering space to linger, observe, and exist more fully within the architecture.

"Architecture has its own realm. It has a special physical relationship with life. I do not think of it primarily as either a message or symbol, but as an envelope and background for life which goes on in and around it, a sensitive container for the rhythm of footsteps on the floor, for the concentration of work, for the silence of sleep."

Peter Zumthor

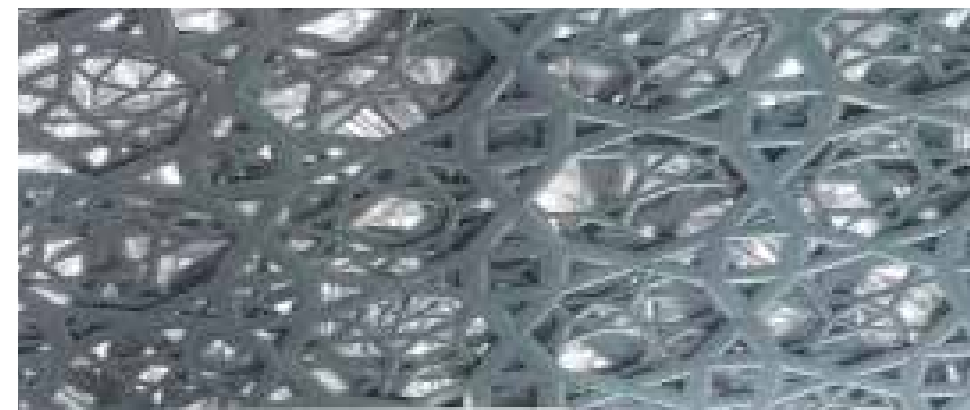
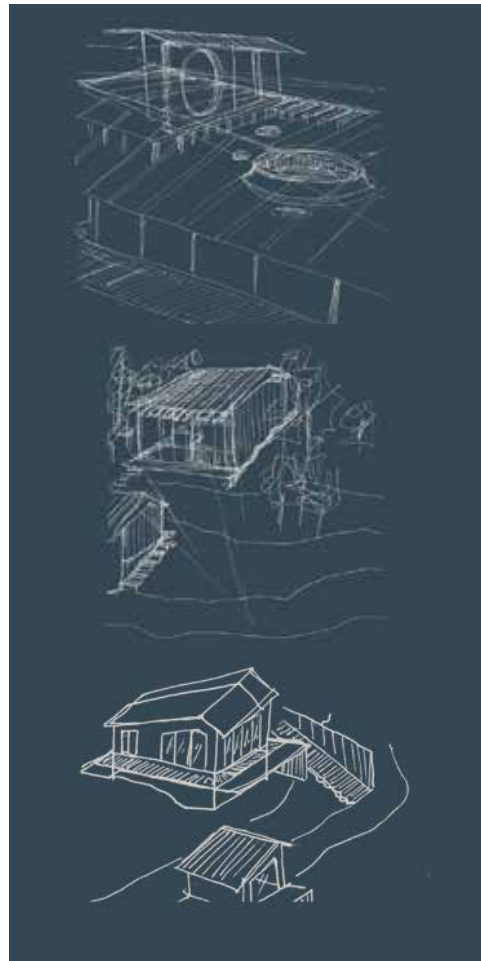


FIGURE 4-1
FIGURE 4-2
FIGURE 4-3
FIGURE 4-4

THRESHOLD EXPLORATION



EARLY DESIGNS



THRESHOLD: INHABITABLE AND HABITABLE

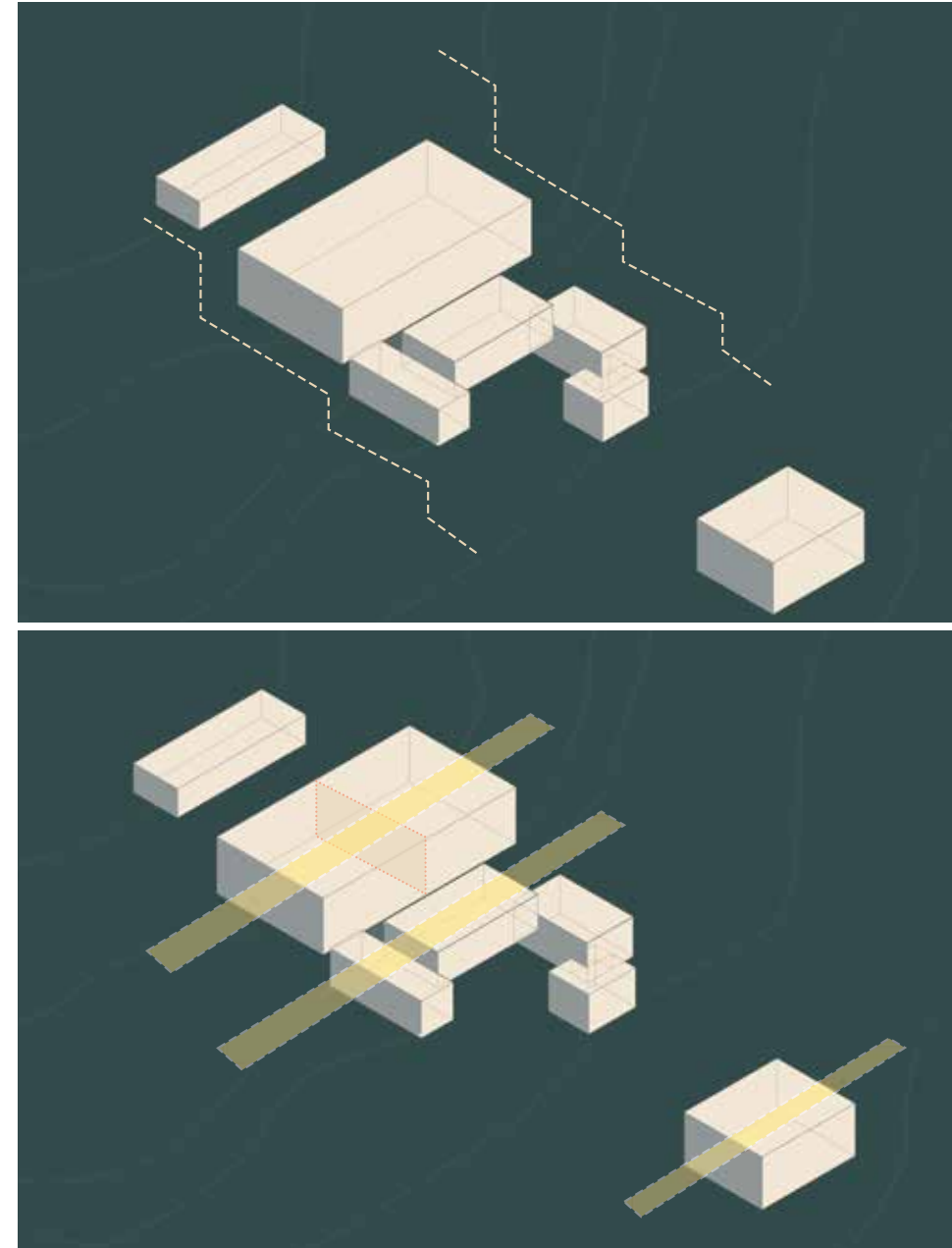








PARTI + CONCEPT DIAGRAM



FLOOR PLAN DETAILS





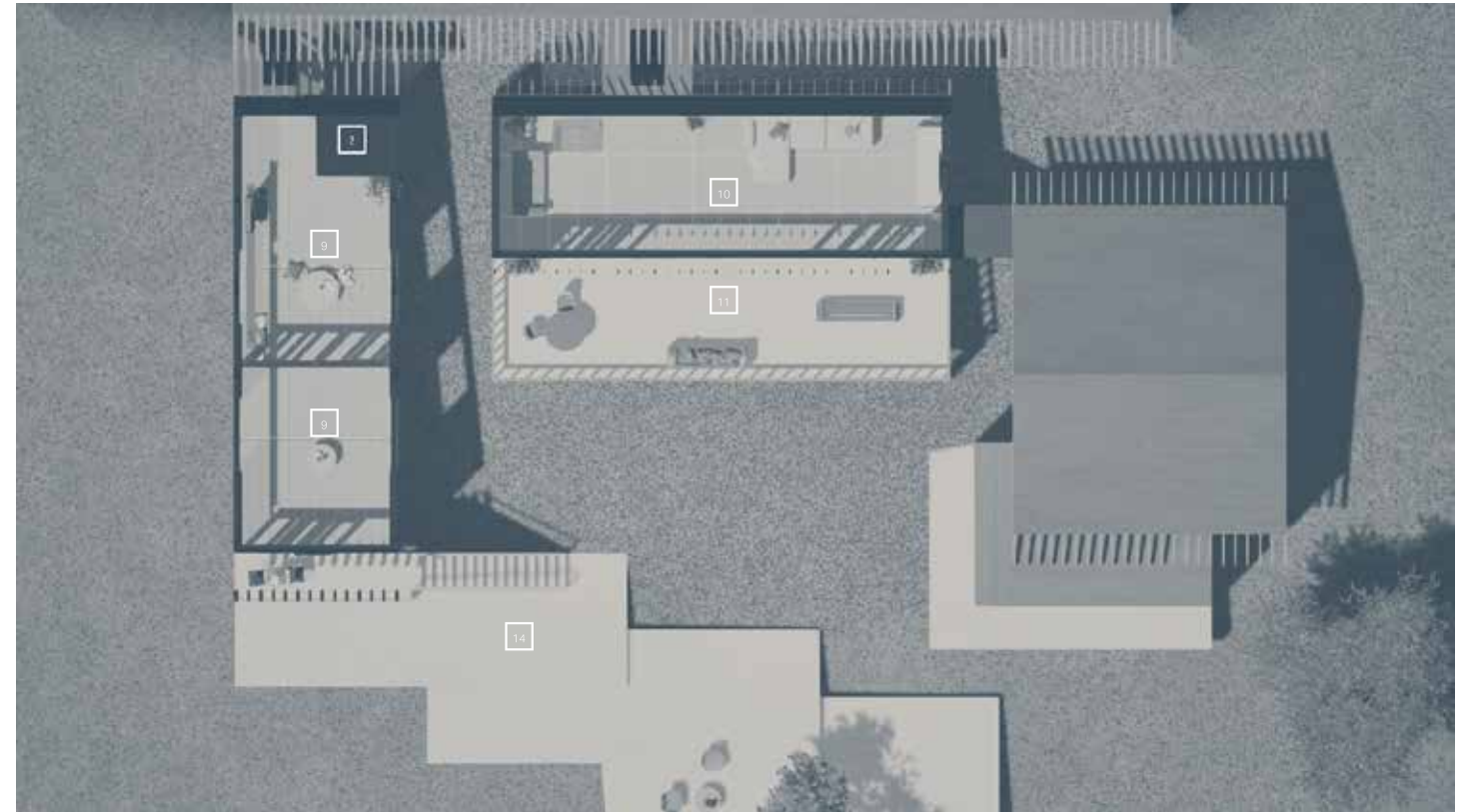
1ST FLOOR + 2ND FLOOR



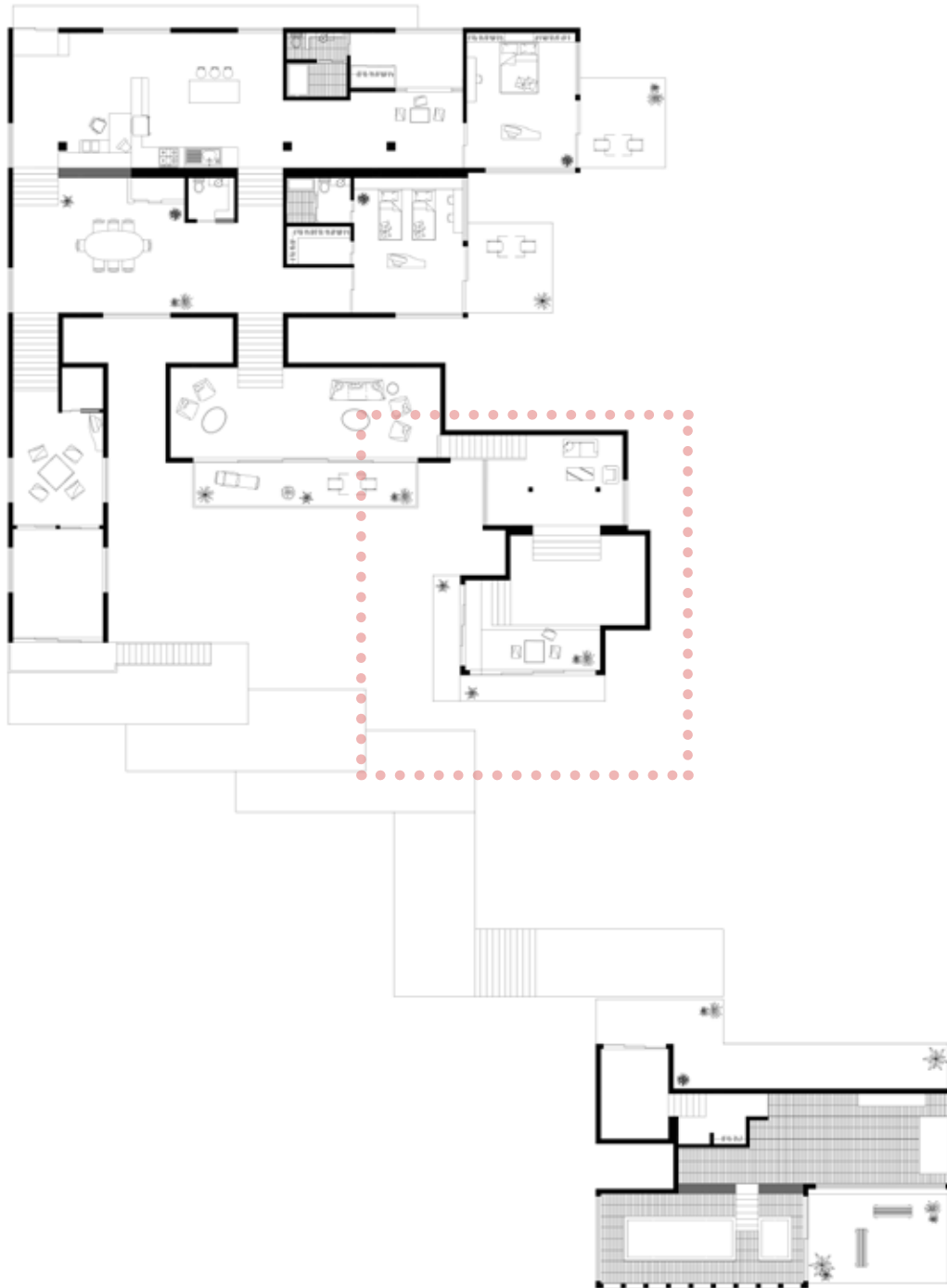
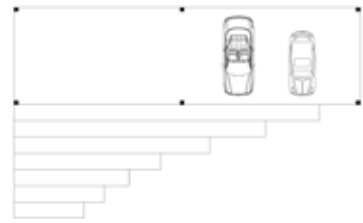
- 1. BATHROOM
- 2. CLOSET
- 3. DINING ROOM
- 4. VANITY + POWDER ROOM
- 5. INFORMAL OFFICE
- 6. KITCHEN
- 7. BEDROOM
- 8. PRIVATE BALCONIES
- 9. MEDITATIVE SPACE + SPARE BEDROOMS
- 10. LIVING ROOM
- 11. MAIN BALCONY
- 12. MAIN OFFICE
- 13. LOWER LOUNGE
- 14. OUTDOOR TERRACING LEVELS
- 15. SPA + BATH SPACE
- 16. SHOWER STATION
- 17. BATH HOUSE OUTDOOR SPACE
- 18. BATH HOUSE ENTRANCE



3RD FLOOR



- 1. BATHROOM
- 2. CLOSET
- 3. DINING ROOM
- 4. VANITY + POWDER ROOM
- 5. INFORMAL OFFICE
- 6. KITCHEN
- 7. BEDROOM
- 8. PRIVATE BALCONIES
- 9. MEDITATIVE SPACE + SPARE BEDROOMS
- 10. LIVING ROOM
- 11. MAIN BALCONY
- 12. MAIN OFFICE
- 13. LOWER LOUNGE
- 14. OUTDOOR TERRACING LEVELS
- 15. SPA + BATH SPACE
- 16. SHOWER STATION
- 17. BATH HOUSE OUTDOOR SPACE
- 18. BATH HOUSE ENTRANCE



4TH FLOOR + 5TH FLOOR



1. BATHROOM
2. CLOSET
3. DINING ROOM
4. VANITY + POWDER ROOM
5. INFORMAL OFFICE
6. KITCHEN
7. BEDROOM
8. PRIVATE BALCONIES
9. MEDITATIVE SPACE + SPARE BEDROOMS
10. LIVING ROOM
11. MAIN BALCONY
12. MAIN OFFICE
13. LOWER LOUNGE
14. OUTDOOR TERRACING LEVELS
15. SPA + BATH SPACE
16. SHOWER STATION
17. BATH HOUSE OUTDOOR SPACE
18. BATH HOUSE ENTRANCE



BATH HOUSE + SPA



1. BATHROOM
2. CLOSET
3. DINING ROOM
4. VANITY + POWDER ROOM
5. INFORMAL OFFICE
6. KITCHEN
7. BEDROOM
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17. BATH HOUSE OUTDOOR SPACE
18. BATH HOUSE ENTRANCE

EAST ELEVATION



NORTH ELEVATION



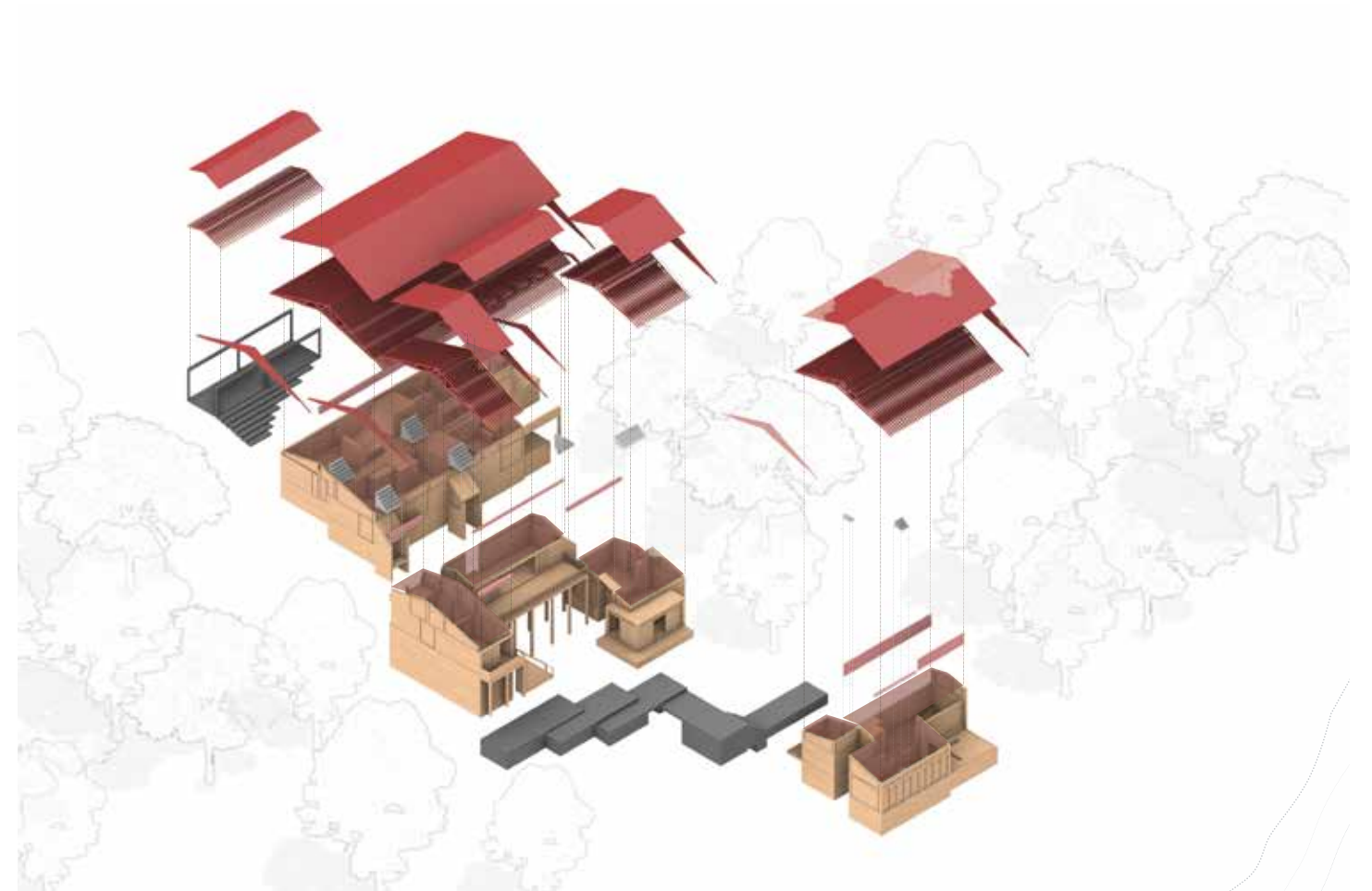
SOUTH ELEVATION



EXTERIOR PERSPECTIVE



AXONOMETRIC



SECTION: DINING ROOM + INFORMAL LIVING ROOM



SECTION: BEDROOM HALLWAYS + MAIN LIVING ROOM + BALCONY



SECTION: OFFICE



SECTION: BATH HOUSE



Thresholds Throughout Architecture

To conclude my thesis, it is evident that thresholds, whether physical, conceptual, or philosophical, are an inevitable and essential aspect of architecture. Every space we design or inhabit requires transitions, passages, and moments of pause or anticipation. These elements subtly guide movement and circulation, helping to establish spatial hierarchy and inform programmatic intent. Through this research, I explored four distinct examples of threshold conditions, each offering a different lens on how in between spaces operate and shape the architectural experience. However, these examples only scratch the surface. There are countless other interpretations and applications of thresholds waiting to be studied. As I continue in my professional journey, I hope to expand on this inquiry, seeking out the in betweenness that lies at the heart of architectural expression and using thresholds as tools to create more meaningful, responsive, and human centered environments.

APPENDIX

FIGURE 1-1

Phifer, Thomas. Glenstone Museum. Photograph. Ursula Magazine, Hauser & Wirth, 10 Sept. 2020, <https://www.hauserwirth.com/ursula/23670-ursula-thomas-phifer-glenstone/>.

FIGURE 1-2

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FIGURE 1-3

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FIGURE 1-4

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FIGURE 2-1

"Figura 9. Peter Zumthor, Termas de Vals, 1996: Sequência de plantas entre esboços e desenho final." ResearchGate, uploaded by Anna Flávia Rodrigues, 2024, https://www.researchgate.net/figure/Figura-9-Peter-Zumthor-Termas-de-Vals-1996-sequencia-de-plantas-entre-esquicos-e_fig3_381376605.

FIGURE 2-2

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FIGURE 2-3

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APPENDIX

FIGURE 2-4

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FIGURE 3-1

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FIGURE 3-2

Global Times. (2021, September 30). Swiss architect Peter Zumthor, a spiritual recluse. <https://www.globaltimes.cn/page/202109/1235362.shtml>

FIGURE 3-3

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FIGURE 3-4

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FIGURE 4-1

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FIGURE 4-2

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FIGURE 4-3

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FIGURE 4-4

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